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मानक

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IS 576 (1989): Glazed kid for shoe uppers [CHD 17: Leather, Tanning Materials and Allied Products]



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IS 576 : 1989  
Reaffirmed - 2012

*Indian Standard*

**LEATHER – GLAZED KID FOR SHOE  
UPPERS – SPECIFICATION**

*( Second Revision )*

**भारतीय मानक**

**चमड़ा – जूतों के उपरलों के लिए बकरे की चमकदार खाल – विशिष्ट  
( दूसरा पुनरीक्षण )**

UDC 675.267 : 685.312.14

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

*September 1989*

**Price Group 2**

## FOREWORD

This Indian Standard ( Second Revision ) was adopted by the Bureau of Indian Standards on 31 March 1989, after the draft finalized by the Leather Sectional Committee had been approved by the Chemical Division Council.

This standard was originally published in 1954. The first revision of this standard was published in 1975 incorporating additional physical requirements, namely, thickness, elongation at break, flexural endurance ( Bally ), colour fastness to rubbing, and chemical requirements, such as, hide substance and total ash.

In this revision, requirements on distension at grain crack and load at grain crack have been incorporated to cover the needs of the footwear industry for better performance of the leather during lasting operation.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

**AMENDMENT NO. 1 MAY 1998**  
**TO**  
**IS 576 : 1989 LEATHER — GLAZED KID FOR SHOE**  
**UPPERS — SPECIFICATION**  
*( Second Revision )*

[ *Page 1, Table 1, Sl No. (i), col 2* ] — Substitute 'over and above' *for* 'over'.

**17)**

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Reprography Unit, BIS, New Delhi, India

*Indian Standard*

# LEATHER – GLAZED KID FOR SHOE UPPERS – SPECIFICATION

( *Second Revision* )

**1 SCOPE**

**1.1** This standard prescribes the requirements and methods of sampling and test for glazed leathers for shoes.

**2 REFERENCES**

**2.1** The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
IS 582 : 1970	Methods of chemical testing of leather ( <i>first revision</i> )
IS 1640 : 1960	Glossary of terms relating to hides, skins and leather
IS 5868 : 1983	Methods of sampling of leather ( <i>first revision</i> )
IS 5914 : 1970	Methods of physical testing of leather
IS 6191 : 1971	Methods of micro-biological colour fastness and microscopical tests for leather

**3 TERMINOLOGY**

**3.1** For the purpose of this standard, definitions given in IS 1640 : 1960 shall apply.

**4 REQUIREMENTS****4.1 Raw Material**

The material shall be wet salted/green goat skins of medium size and of good substance. The skins shall be free from grain and flesh defects.

**4.2 Tanning**

The material shall be so tanned with basic chromium salts that it does not shrink when tested in the blue stage in boiling water as prescribed in LP : 10 of IS 5914 : 1970.

**4.3 Post Tanning**

The material shall be shaved such that the final finished leather is in accordance with the thickness ( $\pm 0.1$  mm) as agreed to between the purchaser and the supplier. The dyeing operation shall be done in drums.

**4.4 Finish**

Glazed kid leathers shall be finished by using albumen seasons or pigment finishes or both. The finish shall be glazed to a highly glossy and plain surface.

**4.5** Glazed kid leather shall conform to the chemical requirements given in Table 1 when tested in accordance with the relevant methods of test referred to in col 4 of the table.

**Table 1 Chemical Requirements for Glazed Kid Leather**

SI No.	Characteristic	Requirement	Method of Test, Ref. to Clause No. of IS 582 : 1970
(1)	(2)	(3)	(4)
i)	Total ash, percent by mass, <i>Max</i> ( over $\text{Cr}_2\text{O}_3$ content )	2.5	LC : 3
ii)	Solvent extractable substances, percent by mass	2.5 to 7.5	LC : 4
iii)	Chromium ( as $\text{Cr}_2\text{O}_3$ ), percent by mass, <i>Min</i>	3.0	LC : 10
iv)	Hide substance, percent by mass, <i>Min</i>	65	LC : 5
v)	Water soluble matter, percent by mass, <i>Max</i>	5.0	LC : 6
vi)	pH of water solubles, <i>Min</i>	3.5	LC : 18
vii)	Differential number	Shall not exceed 0.7	LC : 18

NOTE — Calculation of requirements (i) to (v) are based on zero percent moisture content. The moisture content shall be determined as prescribed in LC : 2 of IS 582 : 1970.

4.6 Glazed kid leather shall conform to the physical requirements given in Table 2 when tested in accordance with the relevant methods of test referred to in col 4, 5 and 6 of the table.

4.6.1 Optional Requirement

Subject to agreement between the purchaser and the supplier, the material shall also comply with the requirement given below:

Characteristic	Requirement	Method of Test
Colour fastness by wet rubbing	Rating not less than 4 after 16 revolutions	LP : 9 of IS 6191 : 1971

5 MARKING

5.1 The leather shall be legibly marked on the flesh side of each piece with the area in square decimetres.

NOTE — The marking should not cause any disfiguration of the leather or migrate itself to the grain surface of the leather coming in contact with it.

6 PACKING

6.1 The leather shall be packed as agreed to between the purchaser and the supplier.

6.2 The packages shall be marked with the name of the manufacturer; recognized trade-mark, if any; number of pieces of leather; total area; and month and year of manufacture.

7 SAMPLING AND CRITERIA FOR CONFORMITY

The scale of sampling and criteria for conformity of the material shall be as prescribed in IS 5868 : 1983.

Table 2 Physical Requirements for Glazed Kid Leather

( Clause 4.6 )

Sl No.	Characteristic	Requirement	Method of Test, Ref to Cl No. of		
			IS 5914 : 1970	IS 6191 : 1971	Annex
(1)	(2)	(3)	(4)	(5)	(6)
i)	Tensile strength, kg/cm <sup>2</sup> , <i>Min</i>	200	LP : 6	—	—
ii)	Elongation at break, percent	40 to 65	LP : 6	—	—
iii)	Tongue tear resistance, kg/cm thickness, <i>Min</i>	30	LP : 9	—	—
iv)	Stitch tear resistance, kg/cm thickness, <i>Min</i>	100	LP : 8	—	—
v)	Flexural endurance ( Bally ), <i>Min</i>	75 000 ( flexes without cracking of grain )	LP : 19 —	—	—
vi)	Colour fastness by dry rubbing	Rating not less than 4 after 32 revolutions	—	LF : 9	—
vii)	Distension at grain crack, mm, <i>Min</i>	7	—	—	A
viii)	Load at grain crack, kg, <i>Min</i>	20	—	—	A

ANNEX A

( Table 2 )

MEASUREMENT OF DISTENSION AND STRENGTH OF GRAIN BY THE BALL BURST TEST

A-1 SCOPE

A-1.1 This method prescribes the procedure for measuring the distension and load at grain crack.

A-1.2 This method is applicable to any light leather but is intended more particularly for use with boot and shoe uppers.

A-2 TERMINOLOGY

A-2.1 Grain

Full grain of that surface of the leather which has been dressed or otherwise finished in such a way as to simulate a grain, or is intended to be used in place of the grain in an ordinary leather



### A-2.2 Grain Crack

The appearance of cracks on the surface of the leather as the leather is extended over a diaphragm under pressure to form a sphere.

### A-2.3 Distension

The amount of stretch of leather over the diaphragm under pressure.

## A-3 PRINCIPLE OF METHOD

**A-3.1** The distension is a measure of the distance through which the clamp moves relative to the ball in a direction normal to the plane occupied by the leather when the disc is clamped and is under zero load. No account is taken of compression of the leather and decrease in its thickness resulting from the application of load by the ball.

**A-3.2** The distension is increased at a rate of approximately 0.2 mm per second. The occurrence of cracks on the grain is watched. The load and distension are noted when grain crack occurs.

## A-4 APPARATUS

**A-4.1** The apparatus consists of the following parts.

**A-4.1.1** A clamp for holding securely the rim of a circular flat disc of leather while leaving the central portion of the disc free to move. The clamp shall hold the clamped area of the disc when a load up to 80 kg is applied to its centre. The boundary between the free and the clamped areas shall be sharply defined. The diameter of the free area shall be 25.0 mm.

**A-4.1.2** A mechanism for thrusting a steel ball, without rotation against the centre of the flesh side of the leather disc, and means for measuring the load applied. The ball shall be of diameter 6.25 mm, and the accuracy of the load measuring mechanism shall be such that the leather test piece is measured with an error not more than 3 percent.

**A-4.1.3** Device for measuring the distension of leather disc shall be calibrated directly in tenths of millimetre and the errors of the scale shall not be more than 0.05 mm at any part of it.

**A-4.2** Figure 1 and 2 show the details of the clamping head and other parts of an instrument which is suitable for use with this instrument.

## A-5 TEST PIECE

**A-5.1** The test pieces shall be cut according to the dimension required for clamping them in the

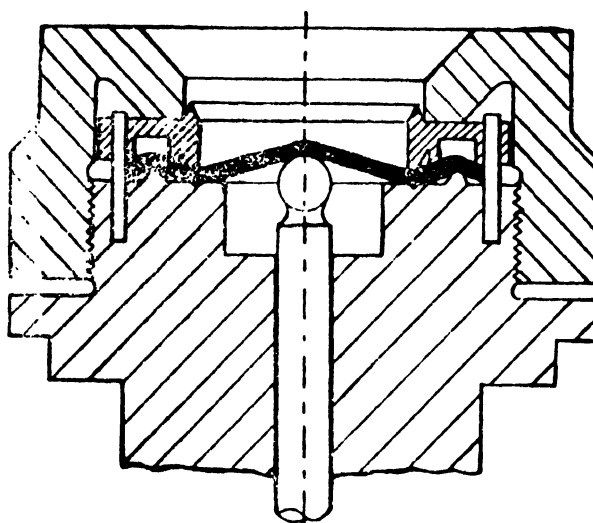


FIG. 1 CROSS SECTION OF CLAMPING HEAD WITH TEST PIECE IN POSITION

apparatus ( *see* Fig. 3 ). The test pieces shall be conditioned as described in 5 of LP : 0 of IS 5914 : 1970.

## A-6 PROCEDURE

**A-6.1** Clamp the conditioned test piece in the instrument with its flesh side adjacent to the ball, and the grain side flat. Increase the distension at a rate of approximately 0.2 mm per second and watch the surface for the occurrence of a crack in the grain. When grain crack occurs, note the load and distension and continue the loading with as little delay as possible. If the disc bursts before the maximum load of the instrument is reached, note the load and distension at burst.

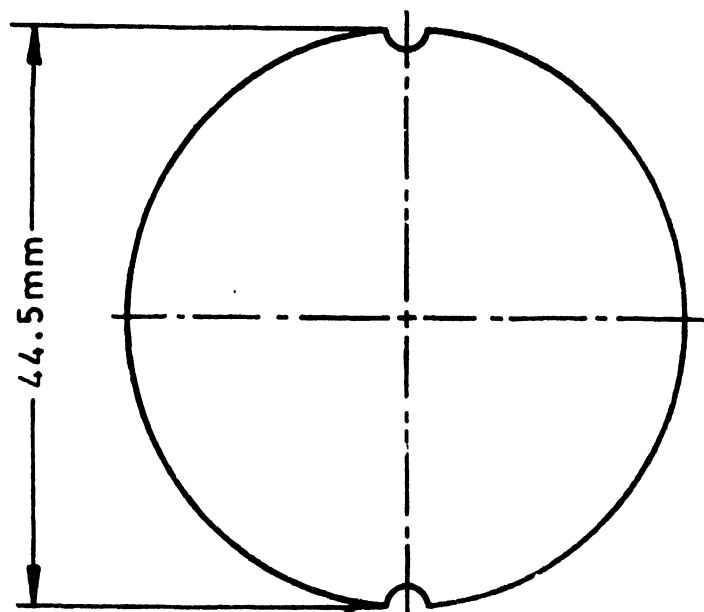
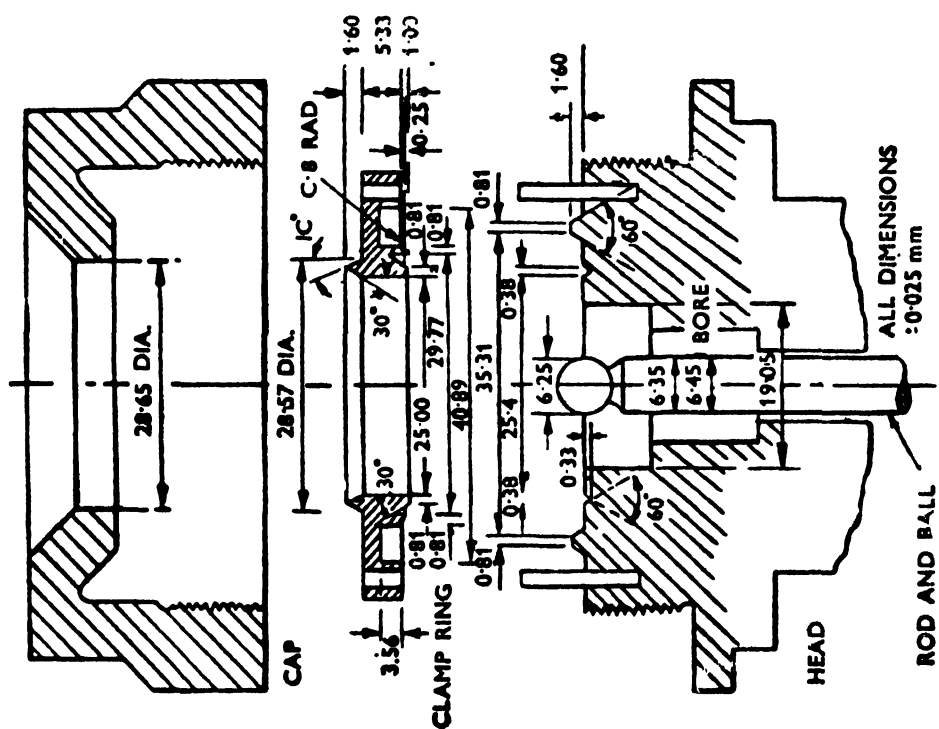
### NOTES

1 Calibrate periodically the mechanism used for the measurement of the load. Also, determine the zero reading of the distension scale, and if it is in error, apply the appropriate correction to each reading of distension.

2 If there is a pause during the distension of a test piece, relaxation of stresses in it occurs, and the load tends to fall. Therefore, the load and distension of grain crack and burst should be measured with the minimum of delay.

## A-7 TEST REPORT

**A-7.1** For each test piece, report the load and distension at grain crack, and the corresponding values at the burst if the leather disc burst before the maximum load is reached. If the sample is known to be other than full grain leather, the same should be stated.



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